REMARKS/ARGUMENTS

Applicants received the Office Action dated November 19, 2003, in which the Examiner: (1) rejected claims 4-5, 14, 16-18, 20, 22-25 and 27-28 as obvious over Tuzhilin (US Patent No. 6,236,978) in view of Jiawei Han ("Towards On-Line Analytical Mining in Large Databases," ACM SIGMOD Record, 27:1, pp. 97-107, 1998) referred to as "Han" hereafter; and (2) objected to claims 2-3, 6-13, 15 and 29-30 as being dependent on a rejected base claim but otherwise allowable. In this Response, Applicants traverse the claim rejections and add claims 31-34. Claims 2-18, 20, 22-25 and 27-34 are pending.   Based on the arguments contained herein, Applicants respectfully request reconsideration and allowance of the pending claims.

I.   CLAIM REJECTIONS

Claim 27, in part, requires "generating a calling profile cube based on call records," "generating a volume-based calling pattern cube for each individual" and "comparing the volume-based calling pattern cube for each customer to a predetermined fraudulent volume-based calling pattern." Neither Tuzhilin nor Han teaches or suggests "calling profiles," "volume-based calling pattern cubes," or "comparing a volume-based calling pattern cube to a predetermined fraudulent volume-based calling pattern" as required in claim 27. Specifically, Tuzhilin teaches generating behavioral rules from an individual's purchasing history. Tuzhilin further teaches aggregating behavioral rules for groups of individuals that exhibit similar purchasing patterns (see Figs. 1-3, col. 3, lines 31-66, col. 5, lines 16-63). The individual or aggregate rules may be implemented in a "Personal Shopping Assistant" (see Figs. 6a-6c). Tuzhilin mentions that "dynamic profile construction methods can also be used in fraud detection systems," but does not provide additional detail (see col. 14, lines 29-32). Applicants cannot find a teaching or suggestion of the above-cited limitations, individually or in combination, in any of the prior art references cited by the Examiner. For at least these reasons, Applicants submit that claim 27 and all claims that depend from claim 27 are allowable.

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Claim 28, in part, requires "generating a calling profile cube based on the call records," "generating a volume-based calling pattern cube for each individual" and "generating a probability-based calling pattern cube based on the volume-based calling pattern cube for each individual customer."   For the reasons described above, neither Tuzhilin nor Han teaches or suggests the above limitations individually or in combination.   The Examiner did not reference the limitation "generating a probability-based calling pattern cube" in the art of record. Therefore, Applicants assume that the Examiner could not find a teaching of the limitation in the prior art references.   At any rate, Applicants cannot find a teaching or suggestion of the above-cited limitations, individually or in combination, in the prior art references cited by the Examiner. For at least these reasons, Applicants submit that claim 28 and all claims that depend from claim 28 are allowable.

Claim 14, in part, requires "a profile engine, coupled to the data warehouse for computing, maintaining and utilizing caller pattern cubes that represent caller profiles; wherein the caller pattern cubes can be utilized to detect telecommunication fraud."   For the reasons given above, Applicants submit that neither Tuzhilin nor Han teaches or suggests this limitation. Specifically, neither Tuzhilin nor Han teaches or suggests "caller pattern cubes that represent caller profiles," and "the caller pattern cubes can be utilized to detect telecommunication fraud" as required in claim 14. For at least these reasons, Applicants submit that claim 14 and all claims that depend from claim 14 are allowable.

II.   NEW CLAIMS

Claim 31, in part, requires "the computer system receives the call records and maintains a caller profile cube for use with detecting telecommunication fraud" and "wherein the caller profile cube comprises a combination of a profile cube and a snapshot profile cube." Applicants cannot find a teaching or suggestion of these limitations in any of the prior references cited by the Examiner. For at least this reason, Applicants submit that claim 31 and all claims that depend from claim 31 are allowable.

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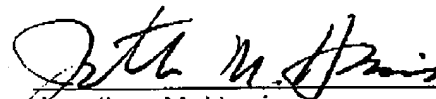**Reply to Office action of November 19, 2003**

III.   CONCLUSIONS

In the course of the foregoing discussions, Applicants may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the prior art which have yet to be raised, but which may be raised in the future.

If any fees or time extensions are inadvertently omitted or if any fees have been overpaid, please appropriately charge or credit those fees to Hewlett-Packard Company Deposit Account Number 08-2025 and enter any time extension(s) necessary to prevent this case from being abandoned.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

                                        Respectfully submitted,

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